

Black Diamond Open Space Conceptual Trail Development Plan

September 2014

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The following trail development plan was developed through an advisory committee, and presented to and approved by King County Parks.

1. Black Diamond Open Space

Black Diamond Open Space (BDOS) is located in rural unincorporated King County outside of the city of Black Diamond. The 1996 Black Diamond Urban Growth Area Agreement identified open space lands around the city for permanent preservation on the principle that for every one acre of urban land added to the urban growth area, four acres would be permanently preserved as open space ("4 to 1 agreement"). Two phases of annexations in 2005 and 2009 dedicated most of the Black Diamond Open Space site currently in King County ownership; an additional phase or two of land dedications are anticipated between 2014 and 2021. Property purchases have also added acreage to the site over the years.

BDOS consists of three non-contiguous geographic units that total 1,180 acres, with 1,100 managed by King County Parks and 80 acres in conservation easement; the focus of the current project is the North Unit. The North Unit area is the largest and most publicly used portion of BDOS. It is located north of the city of Black Diamond on both sides of SR 169 and includes Ravensdale Lake and Creek. A large clearing for Bonneville Power Association (BPA) power lines crosses through the middle of the site from east to west. On the north side of the tracks BDOS adjoins Henry's Ridge, another King County park. To the south, the site is bordered by private property. The property owner has allowed mountain bike trails to be developed, and this area is known as Summit Ridge.

The North Unit area of BDOS and Henry's Ridge is characterized by young forest or shrubs, and a newly acquired area, the Herbrand property, was recently clear cut prior to King County taking possession of it. The lake, creek corridor, and a few large wetlands have a forested buffer.

The site is undeveloped, aside from a small and largely user-built trails network. Non-motorized trail recreation, such as walking, trail running, mountain biking, and horseback riding, are permitted. In June 2014, King County Parks opened a large parking lot on the east side of SR 169 and is intended to serve as the main access point for BDOS. King County Parks' Green-to-Cedar River regional trail is planned for future development through the North Unit, west of SR 169 where another smaller parking lot is expected to be completed in 2015. King County Parks has not formalized a site management plan for BDOS and will begin that process in fall 2014, incorporating the recently completed draft Forest Stewardship Plan in partnership with the University of Washington's School of Environmental and Forest Sciences.

2. Background and Context

Mountain biking is a growing and diversifying sport and South King County is lacking in places to ride. Existing trails are mostly on private land and are disappearing due to development and logging. Existing trails lack appeal for kids and families as well as opportunities for progression for beginners. Mountain bike riders from the communities of Black Diamond, Maple Valley, Ravensdale, Kent, and Covington often travel to Duthie Hill and further to find trails to ride.

King County Parks has seen significant increases in public use of BDOS, mountain biking in particular. The proposed area of BDOS is bordered by two increasingly popular mountain biking destinations, King County Parks' Henry's Ridge and Real-Life Church's Summit Ridge Park.

King County Parks met with Evergreen, the Back County Horsemen of Washington, Tahoma Chapter (BCHW), and local mountain bike enthusiast in 2010 to discuss expanding mountain bike trails in BDOS under and around the power line area (the current proposed area). All parties agreed that there was a need for beginner trails, features and open areas for classes, and an overall layout that facilitates races and events. The proposed area is a good location to meet those needs.

It was agreed that having an established parking lot first would be warranted prior to starting the trail work. Working on parallel paths, King County Parks pursued the design, permits, and construction of the parking lot, while Evergreen completed a King County Parks' Youth Sports Facilities Grant (YSFG) for the trail construction.

Evergreen was approved for a YSFG grant for the project, and with the parking lot underway, King County Parks held a public meeting with the community to discuss the proposal.

Public Engagement and Advisory Committee

In March 2014, King County Parks launched a public engagement process in an effort to understand the public's interests and concerns about the proposal to develop trails and mountain bike features on a portion of BDOS.

King County Parks held an informational public meeting on March 26, 2014. Approximately 80 people attended the meeting, which was facilitated by King County Parks staff, and provided some 60 comments. King County Parks explained their intent to convene the Black Diamond Advisory Committee (BAC), comprised of local residents and recreation users to help provide further guidance on the proposed trail development.

A six-member advisory committee met twice, including twice on-site by some committee members, and came up with the recommendations outlined below. The advisory committee was asked to:

- Review Evergreen's proposal
- Review and consider the public's input
- Provide recommendation to King County Parks about how best to proceed with proposal

Advisory committee members

Drue Hollifield

Russ Moul

Rick Zeleznik (Back Country Horsemen, Tahoma Chapter)

Todd Petrie

Rick Heinz

Mike Westra (Evergreen)

Non-Voting attendees

Glenn Glover (Evergreen)

Bryan Connolly (Evergreen)

Duane Evans (King County Parks)

Butch Lovelace (King County Parks)

3. Proposal and Recommendations

A. Description

The proposal encompasses about 200 acres of BDOS, much of it in the unused area under and around the BPA power lines. Trails and features will include 5-7 miles of multi-use cross-country trails (with future expansion loops), bike-only downhill and jump lines including a dual slalom race line, and education zones with beginner features. See below for individual component descriptions, and map for layout.

B. Meeting the Need

i. Need: Local trails on public land

Existing local trails are mostly on private land and are disappearing at an alarming rate due to development and logging. For those too young to drive, local trails are often the only way younger riders can have the opportunity to get outdoors and ride, and local trails are often the only way families can find time to enjoy the outdoors together. Local trails also relieve traffic congestion associated with long travel distances to/from other destinations like Duthie Hill Park.

ii. Need: Trails for kids, families and beginners

Existing trails in the Black Diamond area (Lake Sawyer, Real Life Church property and Henry's Ridge) are more difficult and technical in nature and don't provide an ideal experience for young kids, families and beginners to learn the sport. The new trails in BDOS will serve as a gateway to life-long healthy participation in mountain biking and appreciation of outdoor recreation. Trails will be designed with a focus on progression opportunities, which Duthie Hill has proven to be a key to trail popularity.

iii. Need: Competitive venues for younger mountain bikers

There are very few public trails in King County for competitive mountain biking events, particularly events for younger riders. The cross country loop trail will be designed to meet the Washington Student League race criteria. A dual slalom race track will be designed to provide a better race experience than Duthie Hill's and be more popular for competitive events.

Based on public input, advisory committee expertise, and King County Parks staff experience, the BAC offers the following recommendations to the King County Parks' Management Team for their consideration and response.

C. High Level Objectives

- i. Create more opportunities for bikers, equestrians, hikers, runners and other trails users to enjoy the space and connect to adjacent trails systems
- ii. Create more opportunities to get kids & families outside enjoying King County Parks
- iii. Create more opportunities for mountain biking in King County
- iv. Compliment Lake Sawyer, Summit Ridge and Henry's Ridge trails with more youth and beginner friendly progression-focused trails
- v. Create a cross country trail that connects new trails to existing BDOS and adjoining trails that is suitable for Washington Student League races

4. Design Themes and Criteria

- i. Trails and features are specifically designed to fill progression/skills gaps and trail styles missing in local trails at Henry's Ridge and Summit Ridge.
- ii. Trail intersections are minimized to make route-finding easier for youth & new riders.
- iii. Trails and features will be constructed using Evergreen design guidelines and standards developed over time from the International Mountain Biking Association, I-5 Colonnade and Duthie Hill.

5. Deliverables/Trail Components

- i. **Cross-country Multi-use Loop Trail:**
In response to a number of public comments related to safety, King County Parks reserves the right to reevaluate the mixed-use designation for the loop trail at any time.
 - a. Trail will be a traditional multi-use 2-way trail, 5-7 miles, kid/family friendly
 - b. Trail will have adequate clearing for hiker, biker, equestrian interaction
 - c. Leave Route66 as a multi-use wide thru-way for users who want to stay off the XC loop to get through BDOS more quickly, and for maintenance and emergency access
 - d. Loop may or may not join and leave the thru-way for short sections
 - e. Loop to be designed so that challenge increases further from parking lot
 - f. Loop will be designed with cutovers to provide easier/shorter routes & stacked loop options
 - g. Loop will be routed so that unused space is left for future XC trail expansion to provide progression, challenge & a more primitive trail experience
 - h. Loop trail will be designed to meet Washington Student League (WSL) Race Course Criteria:
 - Suitable for all skill levels – League includes young kids just beginning, so avoid technical trails/sections

- Wide open / high speed descents should be avoided – keep narrow and keep speed in check
 - Start and finish line should be in near proximity if not the same location
 - Include passing zones and long wide uphill sections
 - Emergency access and Parking for about 200 cars
 - Large open space for staging, team tents, vendors, etc.
 - Loop near hub for optimal spectator involvement/enjoyment
- ii. **Cross-country Downhill + Road Climb:**
Downhill trail that can be sessioned or added to the XC loop using the existing road to climb. Trail will be moderate/blue by design
 - iii. **Dual Slalom Race Track:**
This will be a very important and unique race line for the region. Classified as moderate/blue, this dual line will be desirable for both events/races, and recreational drop-in.
 - iv. **Pump Tracks:**
Two pump tracks are proposed. One small kids track near the parking lot, suitable for strider bikes, and a full-size track near the hub that allows for smooth flow, high speed riding.
 - v. **Beginner Jump Line:**
Progression focused table top jump line. This will be similar to the Luna Lines at Duthie—a very popular line that will offer a much needed progression step leading into the free-ride trails on the adjoining Summit Ridge RLC property
 - vi. **Education and Skill Building Zones:**
Dedicated space and features for teaching classes. As with the pump tracks, two zones are proposed. One zone is for beginners and will be closer to the parking lot on RLC property. The area is open, good for communicating with a class, and will provide introductory skills features such as log-rides, and boulders. The second zone will be at the central hub and will feature a wider variety of skills features in an open space environment very suitable for classes.
 - vii. **Reserved Spaces:**
The committee calls for future trail expansions off of the Loop Trail. These additional loops will be mountain biking only and can be used for races or simply for recreational riding. The extensions are Phase III of the proposal.

6. Miscellaneous

- i. **Signage:**
During design/development for each Phase, a sign plan will be developed that addresses way-finding, park rules, trail etiquette, and safety. Signs will be a combination of metal color-coded signs similar to Duthie, and wood-routed signs in line with backcountry trail standards.
- ii. **Maintenance and Volunteers:**
During design/development for each Phase, King County Parks will work with Evergreen and the local trails community to recruit and establish a volunteer base to adopt trails for on-going maintenance. Best maintenance practices will be established, allowable hand-tools identified, and a clear line of communication established for performing and tracking volunteer efforts. Specific effort will be made to have the WSL involved in maintaining the loop trail.
- iii. **Parking:**
The existing parking lot and planned parking lot on the west side of HWY 169 should adequately serve recreational users. For events and races, BAC proposes using the upper portion under the power lines. This would entail minimal clearing and leveling and planting grass. This should be completed as part of Phase I.

7. Timeline (estimate and subject to change)

Phase I: Loop trail and event parking

Phase II: Mountain biking features

Phase III: Trail extensions

Staggered Construction Process:

- i. Excavator rough-in of Deliverable X – Segment A
- ii. Hand finishing work on X-A while excavator moves to Deliverable Y – Segment A
- iii. Hand finishing work on Y-A while excavator moves to Deliverable X – Segment B

Phase I –P1&2 Design & Permitting, Southern XC Loop & Event Parking Lot Construction

- Oct–Nov 2014
 - Flag loop trail
 - Establish event parking area. Seed in October or early spring.
 - Phase 1 Permitting: backcountry trail permit concurrence, BPA permit, cultural resources study
- Dec 2014
 - Finalize trail design and construction schedule
 - Begin loop trail construction
 - Begin design for Phase II
- Feb 2015:
 - Complete Phase II design and submit for permits for Phase II
- April 2015:
 - Southern XC Loop Complete
 - Event parking complete
 - Potential for WASL race using new loop coupled with existing trails
- May 2015:
 - Phase II lines flagged and permitted

Phase II – N. XC Loop, Dual Slalom, Pump Tracks, Skill/Edu Zones, Tabletop Construction, Phase III Design

- June 2015:
 - Begin construction of Northern XC Loop and Phase II Trails & Features
- Summer 2015-Spring 2016:
 - Construction of Northern XC Loop and Phase II Trails & Features
 - Phase III extension trails to be considered, designed and flagged
- April 2016:
 - Open complete Phase 1 XC Loop and Phase II trails
 - Park is ready for events (WASL races, Dual Slalom), classes and camps

Phase III (TBD) –XC Extensions Construction

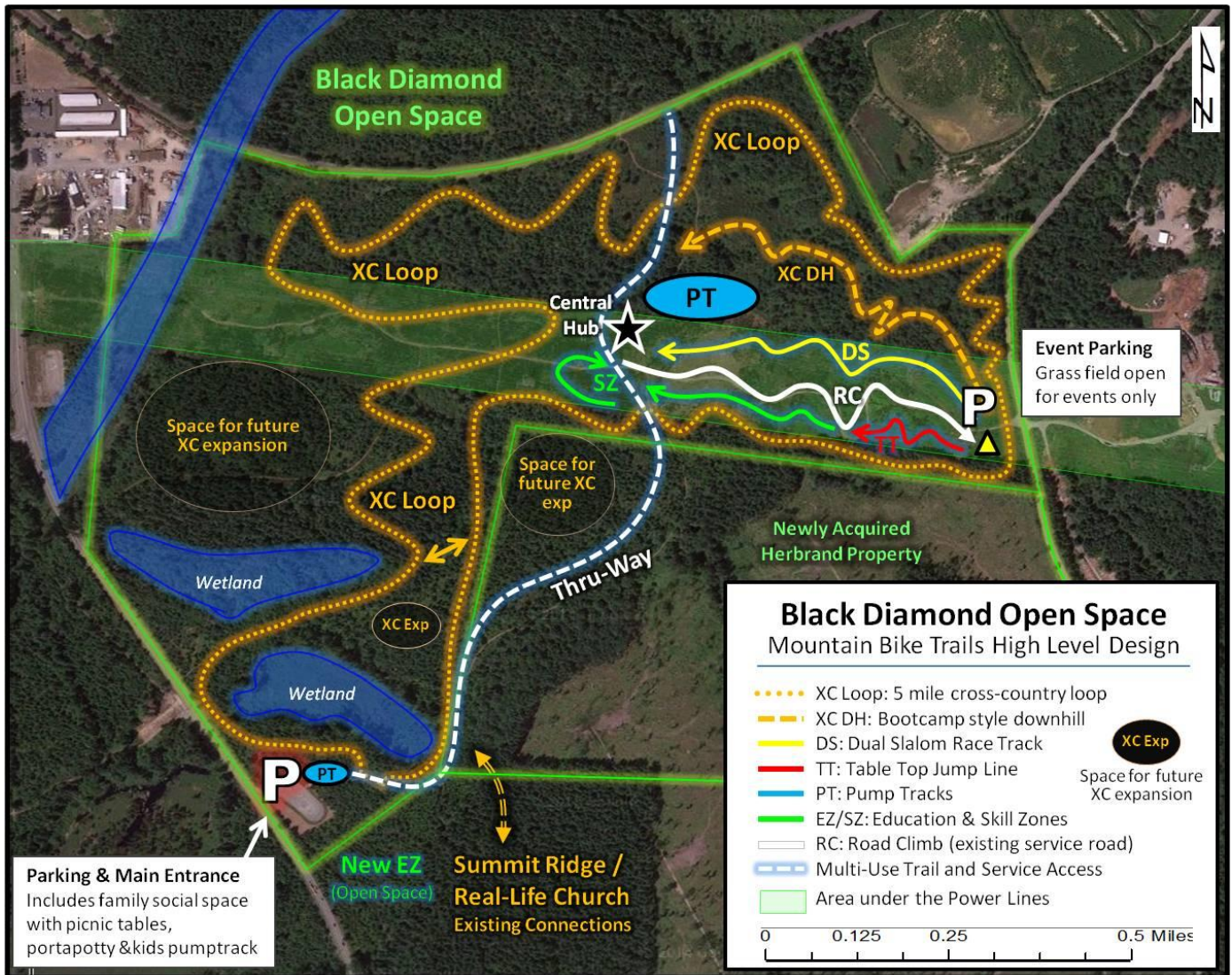
- Summer 2016:
 - Begin construction of Phase III extension trails (completion date TBD)

8. Budget Estimate, Phases I & II (estimate and subject to change)

Expenses	
Trail construction -- machine operation and professional trail building	\$16,000
Trail construction -- volunteer and work party management	\$21,000
Technical trail features and skill zone features construction	\$4,000
Equipment rental, tools, materials and other trail building expenses	\$16,000
Signage	\$3,000
Permit	\$15,000
Event Parking (material, equipment)	\$5,000
Project Management	\$6,240
Detailed design and project plan (scope, schedule, budget)	\$4,000
Administration	\$4,760
	\$95,000
Income	
KC Parks YSFG grant	\$50,000
KC Parks CPG grant	\$20,000
Volunteer Match (1400 hours)	\$21,000
Donated Materials and Services	\$4,000
	\$95,000
Balance	\$0

9. Concept Map and Graphics

Not all features shown below will be used on each trail. The multi-use trail may use very few, if any, of these features. They may be incorporated, however, on the off-shoot trails identified in Phase III, or on the specialized bike trails.



9.1 In-Sloped Turns (Berms)

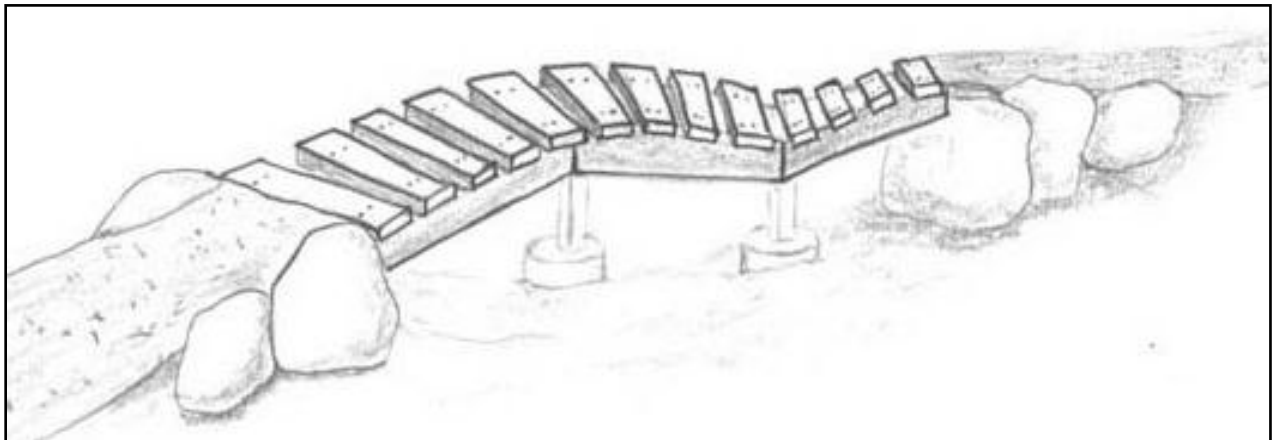


An in-sloped turn or “berm” is simply a banked turn. It is a key feature in making trails “flowy” – where riders carry a relatively steady speed and pedaling cadence -- flowing around turns without having to break hard before the turn and accelerate after the turn.

As a result, berms are more sustainable as they shed water away from the riding surface quickly and they prevent tread erosion from hard breaking, skidding and hard accelerating.

9.2 Ladder Bridges

Also called “boardwalks”, ladder bridges were first used to allow trail users to cross wet areas. Now, they are common popular mountain bike trail features that can be built with varying width, twist and undulation to make them fun trail options that require balance and bike handling skills to cross successfully.





9.3 Skinnies and Log Rides

When riding in the backcountry, balance is a key skill required to negotiate very narrow trail passages and/or trails with exposure to dangerous falls. Skinnies and log rides are narrow elevated riding surfaces for developing balance skills. They can be built from fallen trees, split logs, milled planks or dimensional lumber. Specifications are the same as for elevated ladder bridges (see above).



9.4 Drops

Rock, log and root drops are common natural features on backcountry trails, so are great skill building features to have at bike parks. The characteristic that distinguishes a drop from a jump is the take-off angle. A jump has a positive take-off angle, so sends the rider higher in the air than the lip of the jump. A drop has a flat or negative take-off angle, so sends the rider downward. The two require different skills and technique.



9.5 Rock Gardens

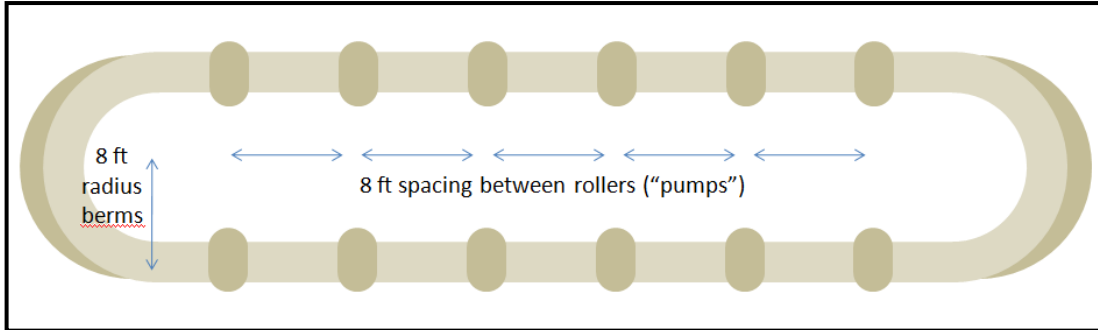
Steep rocky chutes make fun and challenging trail features. They are also a great skill builder before heading out onto backcountry trails where rocks and rocky crossings can be common.



9.6 Pump Tracks

Pump tracks are fun, very low risk and great for skill building. Riders circle the track without pedaling by pumping in and out of the rollers and carving through the banked turns (or “berms”) for speed. Pump tracks can be a simple oval with dirt rollers or a maze of berms and jumpable rollers with options to transfer between lines.

Example of a simple kids oval pump track:



Example of a higher speed, more advanced pump track:



9.7 Dual Slalom

Dual slalom consists of two racers racing two almost identical tracks next to each other down a slope. The courses are short and are filled with tabletop jumps, doubles and bermed turns.



9.8 Jumps

The most popular and most common features at bike parks are jumps.



Three common categories are Table-Tops, Step-Downs and Step-Ups. The following are exaggerated to show the concept.

